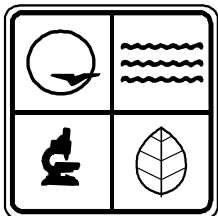


EXECUTIVE SUMMARY

A Missouri Plan for the Safe Management and Collection of Household Hazardous Waste, Family Farm Waste, Conditionally Exempt Small Quantity Generator Waste and Do-It-Yourselfer Used Oil

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EXECUTIVE SUMMARY

Why is it important to be concerned about household hazardous waste? Society has become dependent upon a wide variety of goods and services that make life easier or more convenient. Unfortunately, some of the products, or resulting wastes, may pose a risk to human health or safety, or cause some type of damage to the environment. Almost every home contains household products that are hazardous, such as cleaning products, automotive products, paint and lawn and garden chemicals. These are considered household hazardous products if they contain chemicals that can present acute and chronic hazards to human health and to the safety of people handling them. Household hazardous products contain chemicals that can: corrode or dissolve materials by chemical action and burn or injure skin; ignite or have the ability to burst into flames; explode or produce deadly vapors; or be poisonous or lethal when ingested, inhaled or absorbed through the skin. When household hazardous products are not used completely and are discarded, they become household hazardous waste (HHW). When HHW is not disposed of responsibly, its effects on the environment can include damage to drinking water and ground water, septic systems and sewage treatment plants and has the potential to endanger the health and safety of persons coming into contact with it.

HHW Plan Development

The Missouri Legislature enacted Senate Bill 60/112 in 1995. DNR and the Environmental Improvement and Energy Resources Authority (EIERA) were given the responsibility to “administer the management of household hazardous waste and agricultural hazardous waste from family farms and family farm corporations, to provide for establishment of an education program and a plan for the collection of household hazardous waste on a statewide basis by January 1, 2000.” DNR and EIERA also added Conditionally Exempt Small Quantity Generator (CESQG) hazardous waste and do-it-yourselfer (DIYer) used oil to the planning process. CESQGs can include local governments, schools, hospitals and businesses that produce small quantities of hazardous waste. Often times, waste generated by CESQGs is similar in nature to HHW and they too experience problems similar to household residents securing convenient and affordable waste disposal. Used oil generated by households (DIYer used oil) and by exempt farmers may also be accepted at HHW facilities that comply with regulations for do-it-yourselfer used oil collection centers.

In response to the 1995 legislation, DNR formed an internal steering committee, with representatives from the EIERA and various programs in the Division of Environmental Quality. The purpose of this committee was to guide the process and timing for writing the plan. A technical advisory group (TAG) was also formed with interested persons from within and outside DNR. The purpose of TAG was to broaden the exchange of ideas on HHW issues. DNR invited Missouri businesses, the solid waste industry, the farm community, local government offices, and interested citizens to participate in TAG to provide technical information for the plan. TAG formed committees to address finance, collection and education, and played an active role identifying the goals, objectives and action steps for the plan. This group aided in building consensus on policy recommendations and facilitated preparation of the plan.

HHW Problems and Issues in Missouri

It is becoming increasingly accepted that it would be better to manage HHW, CESQG, farm hazardous waste and DIYer used oil in designated programs for collection and recycling. Programs are needed that will manage these hazardous chemicals safely and properly in order to minimize actual and potential problems. There are many reasons why mismanagement of HHW currently takes place. Major problems and issues that Missouri citizens face in trying to properly handle, store and dispose of HHW include:

- the average home can accumulate as much as 100 pounds of hazardous products; people often improperly use, store and dispose of these products due to a lack of information or wrong information on the subject of HHW;
- because of the dangers they pose, household hazardous products should receive special handling and collection;
- safety in the home, especially for young children, is another reason for concern about stockpiles of hazardous products, especially old, often more dangerous products;
- some hazardous household products threaten our waste systems, the environment, and local government employees such as sanitation workers, police and fire fighters, if not disposed of properly;
- in order for long-term implementation of any management plan to be successful, environmental education is essential for the public to know how to prevent, manage or dispose of HHW in order to safeguard human health and the environment.
- permanent collection facilities can be an effective and convenient solution for citizens to dispose of their HHW; however, due to the lack of facilities currently available to Missourians, HHW disposal is currently very inconvenient and inaccessible;
- one of the biggest problems for municipalities, groups or individuals to overcome is funding a collection event or permanent facility; and,
- HHW projects currently must compete with other solid waste projects based upon a variety of criteria, including the amount of tonnage diverted from landfills, for available state project and district grants.

HHW Legislation and Regulations

Because of its nature, HHW has characteristics that result in the applicability of both hazardous waste and solid waste requirements. As a result, there are overlaps and inconsistencies in its oversight and management. The following summarizes current legislative or regulatory requirements for HHW in Missouri:

- HHW is exempt from hazardous waste regulations, not because it is not hazardous, but because EPA did not want to regulate wastes generated by consumers in their homes. However, in setting standards for HHW collection, we must recognize that health and environmental risks are associated with the mismanagement of HHW.
- The Missouri Hazardous Waste Management Law (MHWML), Section 260.432, known as “Operation SafePlace,” clearly directed the department to establish and promote a

program for the collection and disposition of small quantities of hazardous waste from persons, firms, corporations, state departments and institutions, and political subdivisions.

- Section 260.325 of the Solid Waste Management Law required solid waste management plans to: 1) delineate provisions for the separation of household waste and other small quantities of hazardous waste at the source or prior to disposal; and, 2) establish procedures to minimize the introduction of small quantities of hazardous waste, including household hazardous waste, into the solid waste stream.
- The MHWML has a sanitary landfill ban that prohibits all but de minimis amounts of hazardous waste from disposal. Wastes generated by CESQGs and from farmers in anything other than insignificant or de minimis amounts cannot be legally disposed in Missouri's sanitary landfills.
- Missouri allows CESQGs to generate and/or accumulate only 220 pounds of hazardous waste at any time, as compared to federal standards that allow CESQGs to accumulate 2200 pounds, before they are subject to regulation as a small quantity generator.
- Currently, in Missouri an HHW facility cannot accept CESQG wastes. The federal rules clearly allow facilities that are "permitted, licensed, or registered by a state to manage municipal or industrial solid waste" to accept this material.
- Missouri's conditional exemption for farmers is less stringent than federal regulation. The MHWML conditionally exempts farmers whom have small quantities of hazardous waste. The federal hazardous waste regulations have no similar exemption for farmers. At the federal level, farmers are exempt from hazardous waste regulation only if they triple rinse pesticide containers and dispose of the pesticide residues on their own farm in a manner consistent with the label. Farmers have only this one exemption, and for any other hazardous wastes they generate, they must act as any other generator of hazardous waste.
- The MHWML does not distinguish between individual family farms, farming partnerships, farming corporations, or farms that are managed by cooperatives, estates, trusts or institutions. However, the statutory authority for the HHW plan, Section 260.335, RSMo, is specific to family farms and family farm corporations.
- The Universal Waste Rule (UWR), adopted into Missouri regulations in 1999, relaxes the accumulation, storage and transportation procedures for certain widely-generated wastes, such as pesticides, mercury-containing lamps, switches, thermostats, manometers and batteries. An HHW facility can accept universal waste from householders, farmers or CESQGs, if they meet the management standards for the UW waste types they accept. An HHW facility can *not* accept hazardous waste that is not universal waste from a CESQG.

Education Program

Missouri statutes call for an education program to be developed in conjunction with the collection plan. The education program will inform people and motivate them to reduce, wisely use and safely dispose of HHW and related waste. A separate companion document to the HHW Plan has been prepared, entitled “An Education Program for Household Hazardous Waste Management.”

Management Methods

HHW program information indicates that many individuals believe hazardous household products and related materials pose a significant concern. Materials are stored in homes for long periods rather than being discarded. The Missouri Legislature has acted three times since 1987 to provide funding and direction for collection of HHW or small quantities of hazardous waste.

HHW is estimated to amount to about one percent of municipal solid waste. Data from 1998 Missouri collection programs indicate that approximately 2.3 percent of HHW disposed is being collected. Collection program participation rates are not available for Missouri. Other state's data show that an average of about three percent to five percent of persons participate in collection events, with a maximum of about 10 percent. Improper handling and disposal of hazardous household products and waste, fortunately, have resulted in only occasional safety, health and environmental problems.

Establishing a network of programs to provide collection of household hazardous waste on a statewide basis is estimated to cost between \$12 and \$15 million. Annual operating costs would be about \$3 to \$6 million depending on the collection program approach.

Effective management should address 100 percent of these waste materials, not five percent or 10 percent that may be held and delivered to collection centers by concerned, motivated individuals. However, no single management approach, other than disposal in the trash for subsequent landfilling, can approach a 100 percent level. Missouri needs a multi-faceted management approach that includes front-end, mid-level and back-end strategies. Such an approach is based on the waste management hierarchy: reduce first, reuse what cannot be reduced, recycle what cannot be reused; waste that cannot be prevented, reused or recycled should be treated in an environmentally safe manner; environmentally safe disposal or release should be employed only as a last resort.

Hazardous materials use reduction can be promoted through several complementary and parallel courses of action. The plan recommends that the State of Missouri should establish a hazardous materials use reduction target as a legislative goal. Consistent with actions related to used oil and CESQG hazardous waste, the legislature may wish to consider a ban on disposal of HHW in landfills.

Missouri statutes to control toxic and other hazardous materials need to consider the life cycle of a product, not just a particular stage such as disposal. Opportunities to change the

negative characteristics of a product exist during product conceptualization, development and manufacturing. No such opportunities exist when it is on store shelves. To do this, the Missouri Legislature should consider methods of extended producer responsibility, including manufacturer take-back requirements.

The plan recommends that the legislature should also consider excise taxes for hazardous products with revenue being directed to consumer education, support of collection programs, and other controls for small quantities of hazardous waste.

Greater emphasis should be given to consumer education informing persons, whether householders, farmers, small business owners, purchasing agents and others, about problems associated with inappropriate use and disposal of hazardous materials. Consumer education, in a broad sense, should enable persons to recognize hazardous materials, seek out and purchase safe effective substitutes, properly handle and store these materials, use them fully for their intended purpose, and dispose of unavoidable residue in a safe manner.

There will be hazardous consumer products for the foreseeable future, and there will be residues from these products that need to be appropriately managed. There is a continuing need of sites where unused products or residues can be handled and distributed for their intended use, reuse, recycling or safe disposal. The most convenient and effective way to do this is through collection programs. There is increased effectiveness of HHW collection when combined with solid waste disposal or recycling. It appears worthwhile to consider similar joint approaches to the collection of recyclable items, solid waste and small quantities of hazardous waste, including HHW, universal waste and CESQG waste.

There will always be wastes that cannot be reduced, reused, recycled or completely treated going into landfills, along with materials that are inadvertently disposed of as trash. To protect Missouri's environmental quality, landfills need to be designed to safeguard against contamination of air and water and to protect surrounding properties. Subtitle D landfill requirements do this and have been implemented in Missouri since 1995.

There is no easy solution for the management of HHW, family farm hazardous waste and other small quantities of hazardous waste. A single emphasis management strategy will not result in effective protections. A strategy based on the waste management hierarchy is needed to achieve significant reductions, safe use and controlled disposal of toxic and other hazardous materials.

Financial Considerations

One of the biggest impediments to the establishment of HHW collection programs is the high cost, which can easily exceed \$1 per pound of material collected. To be successful, a program must have assured funding. If community leaders and the general public are educated and made aware of the hazards of HHW and how to reduce, properly handle and dispose of it, they will understand the benefits of an education and collection program and will be more likely to fund one.

The more common funding methods used nationally for HHW programs include: general revenue taxation, solid waste disposal fees, wastewater fees, participant fees, grants, contributions, in-kind support and volunteered time. In some states, lottery revenues, hazardous product excise taxes, specially created grant programs, and public-private partnerships have been used to fund and foster HHW programs. In Missouri, solid waste management grants, local government funds and contributions of money, services or labor are the primary methods of program financing.

Monitoring and Evaluation

It is important to incorporate a process of monitoring (collecting data and information) and evaluation (determining worth) into this household hazardous waste management plan in order to know if or to what extent the goals of the plan have been achieved. As the plan is implemented, it will be necessary to determine its effectiveness in establishing programs, facilities and procedures for statewide management of household hazardous waste. To do this, the goals and objectives of the plan are translated into measures of success with indicators that can be used to identify those aspects of HHW management in Missouri that are effective and those that need additional attention.

HHW Collection Plan Vision and Mission

Citizens of Missouri need to understand HHW issues, recognize appropriate solutions and be able to act accordingly to implement those solutions. Using hazardous products brings with it the obligation to eliminate or reduce these negative impacts. Hence, the **vision** of this plan is...

To protect citizens' health and the environment from the adverse effects of improper use, handling, storage and disposal of hazardous materials used in households, on farms, and in businesses and institutions in Missouri.

In keeping with this vision, the **mission** of this plan is...

To provide guidance on safe alternatives, reduction, use and storage of hazardous materials and to guide the reduction, recycling, collection and proper disposal of these waste materials from family farms, corporate family farms, households and conditionally exempt businesses and DIYer used oil.

HHW Collection Plan Goals and Objectives

There are five interdependent goals that provide the structure for the plan's recommendations.

1. Goal: Hazardous Materials Use Reduction

Promote hazardous materials use reduction in Missouri's households, farms, workplaces and institutions as the preferred means for decreasing exposure to and release of toxic, ignitable, corrosive and reactive materials and waste.

Objectives:

- Establish a percentage reduction goal in state statutes related to the generation and disposal of hazardous wastes from households, farms and conditionally exempt small quantity generators, and consider banning household hazardous waste from disposal in Missouri's municipal solid waste landfills.
- Evaluate the benefits of and consider establishing excise taxes for hazardous products.
- Advocate the concept of overall responsibility of manufacturers, wholesalers and retailers of household hazardous products for the lifecycle of products from conceptualization through production, packaging, transportation, storage, sales, use and ultimate disposal to minimize risks to human health and the environment.
- Coordinate responsibilities of various government agencies to clarify and improve compliance with statutory and regulatory requirements and to remove barriers that impede the implementation of programs to manage HHW, CESQG, family farm waste and DIYer used oil.

2. Goal: Education and Information

The major alternatives for managing HHW recommended in this plan are source reduction, and collection for recovery or appropriate treatment and disposal. Both alternatives are dependent upon a broadly based and effective education program that will provide Missouri citizens with the education, information and training that will promote the understanding, skills and motivation to support and participate in source reduction and collection activities for the management of HHW, family farm hazardous waste, CESQG waste and DIYer used oil.

The success of any HHW management strategy depends on the involvement of the people who generate the wastes. Citizens of Missouri need to understand HHW issues, recognize appropriate solutions, and be able to act accordingly to implement those solutions. To accomplish this, *An Education Program for Household Hazardous Waste Management*, a companion volume to the plan, is designed to help HHW managers inform consumers about the environmental and health and safety concerns regarding HHW, and how their actions can help to reduce these problems. It is necessary to educate citizens about the importance and

practice of reducing waste at its source, possibilities for reuse and recycling, and safe and effective treatment and disposal methods. Success of the plan and education program cannot be achieved without collaboration among many diverse groups.

The Education Program Goals are:

1. Promote general public awareness of problems that result from the improper use, handling, storage, or disposal of household hazardous products and waste as a rationale for informed practices and use of less hazardous products.
2. Provide interest groups with a sound understanding of HHW and related issues and prepare them to advocate and promote to the public a wide range of management solutions.
3. Provide consumers with the necessary knowledge, skills and motivation to participate in HHW collection events and other management strategies.
4. Provide HHW managers with the expertise and decision making capability to safely and effectively manage HHW in their communities.

3. Goal: Program Development and Implementation

Establish regional HHW programs across the state to effectively provide education and information and to ensure adequate availability and accessibility of collection services in Missouri.

Objectives:

- Provide technical support for the development and implementation of HHW programs.
- Develop HHW program guidance materials related to management options and operational policies and procedures for one-day, mobile, regional and permanent programs.
- Encourage existing programs to share management practices, exchange information and mentor the development of new programs.
- Monitor developments in HHW management on a national level and introduce new approaches and innovative techniques to Missouri programs.

4. Goal: Financial Considerations

Provide assistance in developing and procuring funding opportunities for HHW programs.

Objectives:

- Develop recommendations to the Missouri Legislature to provide appropriate funding to support HHW collection and education by carrying out the previous legislative mandates from 1986, 1990 and 1995.
- Encourage local governments to utilize various forms of existing revenues to fund HHW collection and management.
- Provide mechanisms to increase and refocus the amount and availability of grant and loan money for HHW collection programs by emphasizing utilization and improvement of existing funding structures within DNR, and redirect project grant monies toward longer-term projects.
- Identify and evaluate new mechanisms to create sources of funding for HHW efforts.

5. Goal: Monitoring and Evaluation

Oversee the implementation of the plan through data collection, evaluation, periodic reporting and updates to ensure plan goals are being achieved.

Objectives:

- Establish procedures and formats for data collection and reporting in order to compile statewide information on HHW management and progress.
- Provide feedback and dissemination of results to local collection programs to encourage continuing program development and effective management.
- Review the plan initially after three years, and then subsequently every two years, to evaluate plan progress, revise goals and objectives, if needed, and re-define tasks.